

REMARKS

On entry of this Response, claim 1 is amended to recite that “the separator is in an upright position and a width of the separator is greater than a height of the separator.” Support for the amendment can be found, for example, in Figure 1. No new matter is added.

Claims 3 and 4 were canceled previously. Now pending in the instant application are claims 1, 2, 5, and 6, of which claim 1 is independent. Applicants respectfully submit that the pending claims define over the art of record.

I. Claim Rejection under 35 U.S.C. §103(a)

Claims 1-3, 5, and 6 are rejected under 35 U.S.C. §103(a) as being unpatentable over US 6,403,247 (hereafter “the Guthrie reference”) in view of US 2001/0033954 (hereafter “the Gyoten reference”). See the Office Action, page 2. Applicants respectfully traverse this rejection in view of the amended claims.

A. Claim 1

Applicants respectfully submit that the combination of the Guthrie and Gyoten references does not teach or suggest that “the separator is in an upright position and a width of the separator is greater than a height of the separator, ... said coolant supply passage is provided at a middle position of one vertical end of said separator, and said coolant discharge passage is provided at a middle position of the other vertical end of said separator, ... said air-releasing passage is positioned above said coolant discharge passage at the other vertical end of the separator,” as recited in amended claim 1.

The claimed invention is directed to a fuel cell including an air-releasing passage that is positioned above the coolant discharge passage at the vertical end of a separator whose width is *greater* than its height. In a separator whose width is greater than its height, air in the coolant tends to concentrate at the position above the coolant discharge passage. The claimed invention addresses this issue by forming the coolant supply passage at one vertical end of the separator, the coolant discharge passage at the other vertical end of the separator, and the air-releasing passage at the same vertical end as the coolant discharge passage and above the coolant discharge passage.

With the above feature of the claimed invention, it is possible to enhance the air discharging efficiency remarkably as compared with an air-releasing passage positioned at the same side as the coolant supply passage. The positional relationship between the air-releasing passage and the coolant supply/discharge passage is not a mere design choice.

In the Guthrie reference, the coolant air vent (742) is provided at one vertical end near the coolant inlet manifold (740), not the coolant exhaust manifold (744), in a separator with a width *smaller* than the height. The Guthrie reference does not teach or suggest that “the separator is in an upright position and a width of the separator is greater than a height of the separator, ... said coolant supply passage is provided at a middle position of one vertical end of said separator, and said coolant discharge passage is provided at a middle position of the other vertical end of said separator, ... said air-releasing passage is positioned above said coolant discharge passage at the other vertical end of the separator,” as recited in amended claim 1. Therefore, the Guthrie reference does not achieve the remarkable effect of the claimed invention.

Furthermore, those of ordinary skill in the art would not arrive at the claimed invention based on the disclosure of the Guthrie reference.

The Gyoten reference is cited by the Examiner to provide teachings for the feature that the separator includes metallic plates. The Gyoten reference, however, does not teach or suggest that “the separator is in an upright position and a width of the separator is greater than a height of the separator, ... said coolant supply passage is provided at a middle position of one vertical end of said separator, and said coolant discharge passage is provided at a middle position of the other vertical end of said separator, ... said air-releasing passage is positioned above said coolant discharge passage at the other vertical end of the separator,” as recited in amended claim 1. Although the Gyoten reference is combined with the Guthrie reference, the combination does not teach or suggest the above feature. There is no disclosure in the Gyoten and Guthrie references of the air-releasing passage provided at the same vertical end as the coolant discharge passage and above the coolant discharge passage, as recited in amended claim 1.

For at least the reasons set forth above, Applicants respectfully submit that the combination of the Guthrie and Gyoten references does not teach or suggest all of the features recited in amended claim 1. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 1 under 35 U.S.C. §103(a).

B. Claims 2, 3, 5 and 6

Claim 3 was canceled previously. Therefore, the rejection of claim 3 is misplaced. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of claim 3 under 35 U.S.C. §103(a).

Claims 2, 5, and 6 depend from amended claim 1 and, as such, incorporate the subject matter recited in amended claim 1. For at least the reasons set forth above with respect to claim 1, Applicants respectfully submit that the combination of the Guthrie and Gyoten references does not teach or suggest all of the features recited in claims 2, 5, and 6. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claims 2, 5, and 6 under 35 U.S.C. §103(a).

II. Conclusion

In view of the above comments, Applicants believe that the pending application is in condition for allowance and urges the Examiner to pass the claims to allowance. Should the Examiner feel that a teleconference would expedite the prosecution of this application, the Examiner is urged to contact the Applicant's attorney at (617) 227-7400.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080, under Order No. TOW-051RCE3. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. §1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

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Respectfully submitted,

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